HIGH SPEED SURGICAL CUTTING INSTRUMENT

Abstract

A surgical cutting instrument including an outer tube, inner wire assembly, cutting tip, coupling chuck, and housing. The outer tube includes a lumen extending from a proximal end to a distal end. The inner wire assembly is received within the lumen. Preferably, the outer tube and inner wire assembly form a longitudinally curved segment. The cutting tip is connected to a distal section of the inner wire assembly. The coupling chuck is secured to a proximal section of the inner wire assembly. The housing maintains the outer tube and the coupling chuck. A rotating journal bearing, preferably a rotating-hydrodynamic bearing, is established between the inner wire assembly and the inner surface of the outer tube, allowing nominal rotational speeds of 80,000 RPM. Preferred embodiments of the surgical cutting instrument enhance surgeon visibility, minimize heat build-up, and provide improved stiffness and thermal protection.